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ABSTRACT

The classroom environment elicits social comparison behavior in which a student uses peers' performance as a gauge for his own self-assessment. Social comparison as it relates to ability is a four phase sequential process. In phase one, stimulation of social comparison is elicited through developmentally-determined cognitive capacities and motives and situationally-elicited motives. Social comparison information begins to influence 7 and 8 year old children and increases dramatically thereafter. Once social comparison interest is elicited, the individual moves into phase two, in which he behaves in ways designed to obtain comparison information. This acquisition behavior is twofold: the choice of comparison person(s), and the timing and mode of information acquisition. An individual's choice of a comparison person is based on the specific motive underlying comparison, the degree of satisfaction, and developmental/temporal needs. Once the comparative data are collected the individual enters phase three, in which he has a perception of his relative performance; i.e., superior, equal, inferior. The fourth and final phase of the process concerns the individual's reaction to perceived relative performance, both intrapersonally and interpersonally, on cognitive, affective, and behavioral levels. Intrapersonally, comparison information affects performance expectancies and attributes, self-concept, task performance, and self-reward. Peer performance attributes, attraction/popularity, competitiveness, aggression and classroom disruption are all possible interpersonal responses to social comparison. Implications for classroom design and educational goals are discussed. Extensive references complete the article. (BL)

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SOCIAL COMPARISON AND EDUCATION

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2 Social Comparison and Education

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The typical classroom setting is pervaded by evaluation. It seems probable, therefore, that one of the major outcomes of schooling is sensitization to the quality of one's own and others' intellectual performance. Although evaluative processes in the classroom are widely recognized in discussions of educational theory and practice, most commentary focuses on the teacher as the source of such evaluation. The teacher's role in assigning formal grades has been discussed for some time. More recently, attention has been paid to subtle verbal and nonverbal messages that convey teachers' evaluations to students. Although it is no doubt true that teachers influence students' perceptions of their performance, research on the reward system of the classroom often implies that the teacher is the *only* source of evaluative information and that students are passive recipients, rather than active seekers, of such information. The major premise of this chapter is that another source of evaluative information is available in the classroom and that students actively utilize this source to evaluate their own performance. The alternative information source is peers' performance. The active process by which students obtain and use this information is social comparison.

It has been argued (Pepitone, 1972) that the classroom environment is ideally suited to elicit social comparison behavior. One reason for this is that the classroom generates cognitive uncertainty in students. This uncertainty is produced by new instructional materials, alterations in the normal routine of classroom activities, and other novel or ambiguous aspects of classroom life. In order to reduce uncertainty, students need information about how to adapt to their changing environment. Moreover, the typical classroom has a strongly evaluative atmosphere because of a reward system based on academic performance, perceived teacher concern with achievement, and parental pressure to perform

well. This evaluative atmosphere produces a need in students to evaluate their own performance. Finally, because of the accessibility of relatively similar peers, students can reduce their cognitive and evaluative uncertainty by engaging in social comparison.

Other investigators share Pepitone's conviction that social comparison is a pervasive aspect of classroom life. For example, Veroff (1969, 1978), in his analysis of autonomous and social achievement motivation, cites classroom experience as a crucial facilitator of social comparison interest in young children. Suls and Sanders (1979) also suggest that participation in the educational system encourages children to compare themselves with their peers. In fact, social comparison interest seems to be so ubiquitous in schools that a good deal of comparison occurs even in educational environments explicitly designed to minimize ability ranking and grade competition (Crockenberg & Bryan, 1978). A poignant example of the pervasiveness of social comparison, even among very young children in a school setting that actively discourages such comparison, is contained in an anecdotal report by Hechinger and Hechinger (1974):

> When still in kindergarten, our sons were zealously protected from any knowledge about their relative standing in the class; yet they regularly came home with detailed information about who was where in the workbooks. When the teachers, in disapproval of such rampant competitiveness, cut the page numbers off the workbooks, the children simply started to count the pages and continued to issue their own communiques. (pp. 86 and 92)

Finally, it is important to note that desire for comparison information is not restricted to young children: older children and even college students display strong motivation to compare their performance with that of their peers (e.g., Brickman & Berman, 1971; Schofield & Sagar, 1979; Suls & Tesch, 1978).

The foregoing discussion suggests that acquisition of social comparison information for self-assessment purposes is a pervasive phenomenon in schools. But what are the consequences of this acquisition for students' responses (affective, cognitive, and behavioral) to themselves and others? One context in which this question has been addressed is the "mainstreamed" classroom—a classroom in which academically handicapped students join regular students for all or part of the school day. Advocates of mainstreaming have tended to assume that regular class participation would reduce the stigma associated with special class placement (cf. Kaufman, Gottlieb, Agard, & Kukic, 1975). That is, through increased contact and social comparison, "normal" students would learn that handicapped students are reasonably competent and hence would not reject them. Similarly, handicapped students would perceive that they could succeed in a regular classroom and hence would feel better about themselves than they would in a special classroom. Unfortunately, in contrast to these optimistic assumptions, recent evidence suggests that handicapped students in mainstreamed

classrooms sometimes suffer more social rejection from peers and have lower self-concepts than similar children who remain in special classrooms (Bryan & Bryan, in press; Gottlieb & Leyser, 1981; Smith, 1980; Strang, Smith, & Rogers, 1978). The impact of social comparison information on students' interpersonal and intrapersonal responses has also been revealed in other contexts. For example, research on classroom goal structures indicates that cooperative learning techniques, which give students a sense of relative competence vis-a-vis their peers, can positively influence such diverse school outcomes as self-esteem, peer relations, and academic achievement (see Aronson & Osherow, 1980; Johnson & Johnson, 1978; Slavin, 1980, this volume). As the above examples indicate, social comparison research that seeks to clarify the schooling process must focus on the consequences as well as the causes of comparison.

Although a number of investigators have recognized the importance of social comparison in educational settings, a systematic analysis of the causes and consequences of comparison in such settings has not been offered. This is no doubt partially attributable to the absence of a general framework for organizing the extensive social comparison literature. Although Leon Festinger was not the first theorist to be interested in comparison processes (see Hyman & Singer, 1968, for a historical review of early comparison theories), his seminal 1954 paper stimulated the bulk of subsequent research on the topic. In the quarter century since Festinger's paper was published, social comparison theory has been elaborated and refined (for reviews, see Latane, 1966; Pettigrew, 1967; Suls & Miller, 1977), and many of the central tenets of the theory have been incorporated in other formulations (e.g., Albert, 1977; Carver, 1979). Surprisingly, in spite of the large volume of theoretical and empirical work on social comparison, little effort has been made to conceptualize various aspects of the comparison process as parts of a unified whole.

In order to provide an integrated picture of the social comparison process and to clarify the relevance of this process to classroom phenomena, a general model of the social comparison process has been developed. This model, which views social comparison in terms of four sequential phases, is useful not only in organizing past work conducted under the social comparison rubric, but also in integrating related work that clarifies the comparison process.

A MODEL OF THE SOCIAL COMPARISON PROCESS

Several aspects of the following presentation should be mentioned. First, the model focuses on ability comparison; opinion and emotion comparison are not explicitly treated (see Suls & Miller, 1977, for reviews of relevant research). Second, rather than presenting an exhaustive review of research dealing with social comparison of ability, selected studies are cited to illustrate particular aspects of the model. Finally, the model is more appropriately viewed as a

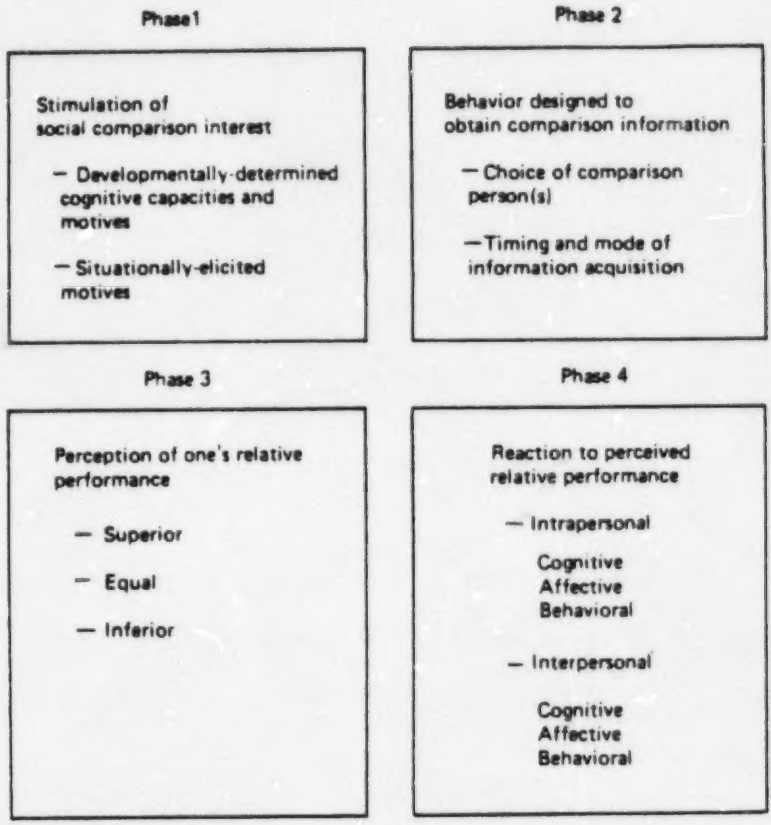

FIG. 2.1. Model of the social comparison process.

heuristic device for summarizing past work and suggesting future research, rather than as a formal theory.

The model can be briefly summarized as follows (see Figure 2.1). Social comparison interest is stimulated by developmentally-determined cognitive capacities and motives and by situationally-elicited motives (Phase 1). This interest produces behavior designed to obtain social comparison information (Phase 2). Such behavior can be analyzed in terms of the person(s) chosen for comparison and the timing and mode of information acquisition. Social comparison behavior, in turn, provides relative performance information indicating that one is superior, equal, or inferior to the comparison person(s) (Phase 3). Finally, this relative performance information elicits intrapersonal and interpersonal reactions that are cognitive, affective, and behavioral in nature (Phase 4). Each phase of the model is discussed in greater detail below.

Stimulation of Social Comparison Interest (Phase 1)

As Figure 2.1 indicates, two major determinants of social comparison interest have been identified: (a) developmentally-determined cognitive capacities and motives (including personality traits) and (b) situationally-elicited motives. With regard to the former, it is assumed that developmental changes reflect the interaction of age-related structural shifts in cognitive processing abilities and the cumulative impact of social and nonsocial experiences. Developmental changes have been observed in several perceptual-cognitive phenomena that seem likely to affect social comparison interest. These include a child's conception of ability, feeling of responsibility for goal-oriented outcomes, awareness of the challenge value of tasks, and ability to integrate achievement-related information (Ruble, 1980; Ruble & Boggiano, 1980). Even more relevant to our present interest is evidence indicating developmental changes in the degree to which social comparison information is sought and used. Thus, although some social comparison behavior is exhibited by preschool children (Mosatche & Bragonier, 1981), interest in social comparison information increases during the early school years (e.g., Ruble, Feldman, & Boggiano, 1976). Moreover, there is evidence that social comparison information is not used for self-evaluation until at least the second grade (e.g., Ruble, Boggiano, Feldman, & Loebl, 1980; Ruble, Parsons, & Ross, 1976) and does not influence behavior based on competence judgments for children younger than 7–8 years (e.g., Boggiano & Ruble, 1979; Spear & Armstrong, 1978). Finally, consistent with the notion that use of social comparison information is influenced by developmental factors, research suggests that children's ability to assess accurately their own academic performance increases rather dramatically with age (Nicholls, 1978, 1979), as does their tendency to behave competitively (McClintock, 1978).

A developmental analysis of social comparison in children has been offered by Ruble et al. (1980). These investigators argue that social comparison is a multilevel process, with different levels developing at different times. More specifically, they suggest the following developmental sequence: (a) motivation to seek information about others' performance, (b) information-seeking strategies, (c) use of comparison information for tangible rewards (e.g., equalizing rewards between self and other), and (d) use of comparison information for abstract assessment (e.g., self-evaluation) and behavior based on such assessment. In speculating about why young children do not use comparison information for abstract assessment and related behavior, Ruble and her colleagues suggest that young children assign low weight to comparison information when evaluating themselves. This low weight, in turn, may be due to children focusing on their direct experience with the task, teachers' lack of emphasis on social comparison, and children's perception that their abilities are changing so quickly that relative performance information is meaningless.

In a more recent paper, Ruble (in press) elaborated the above ideas by citing evidence that 6-year-old children have the basic cognitive capacities (i.e.,

awareness of individual differences, recognition of relative standing), motivation, and information-acquisition strategies necessary for social comparison. However, these children lack certain inferential capabilities (e.g., ability to shift from surface to depth application of comparison information and to make self-reflective inferences) that are essential to the use of comparison information for abstract assessment of one's abilities and behavior based on such assessment. These inferential capabilities are needed in part because, as discussed later, abilities are invisible entities that must be inferred from overt performance and performance can be influenced by both ability and nonability factors (Darley & Goethals, 1980; Goethals & Darley, 1977).

Finally, Suls and Mullen (1982) have recently offered an ambitious life-span developmental model of self-evaluation of ability. These authors suggest that temporal comparisons (i.e., comparisons between one's present and past performances) predominate in both early childhood (ages 3–4) and old age (ages 65 and over). In contrast, social comparisons (i.e., comparisons between one's own and others' present performances) are dominant in (a) middle childhood (ages 4–8), (b) late childhood, adolescence, and young adulthood (ages 8–40), and (c) middle age (ages 40–65). Suls and Mullen argue that young children use temporal comparison because of their cognitive inability to make social comparisons (e.g., failure to understand the discounting principle), whereas elderly people use temporal comparison primarily because of social factors (e.g., unavailability of similar comparison others). In addition, as will be discussed in the following section, these authors contend that preferred targets of social comparison change systematically over the life span.

Turning now to situationally-elicited motives as determinants of social comparison interest, it is appropriate to mention briefly Festinger's (1954) position, since it is the basis of subsequent developments in this area. Festinger suggested that individuals are motivated to evaluate their abilities and opinions (i.e., to obtain accurate information about themselves, regardless of its hedonic value), because accurate self-evaluation is essential to behavioral adaptation and hence survival. He went on to argue that when objective nonsocial standards for self-evaluation are absent, individuals compare their abilities and opinions with those of similar others.

Subsequent analyses have suggested that, in addition to desire for *accurate* self-evaluation, other motives can also produce social comparison interest. One of these is desire for *flattering* self-evaluation, or self-enhancement (e.g., Goethals & Darley, 1977; Gruder, 1977; Israel, 1956; Thornton & Arrowood, 1966). Also, social comparison interest can be stimulated by desire to (a) cope with environmental ambiguity (e.g., Pepitone, 1972); (b) optimize effort on a task (e.g., Halisch & Heckhausen, 1977); and (c) select potential partners for cooperative tasks and potential opponents for competitive tasks (Harvey & Smith, 1977).

Finally, some investigators have taken issue with the basic notion that people actively strive to obtain comparison information. They argue that social compari-

son is inherently aversive and therefore is often avoided. Thus, Brickman and Bulman (1977) present evidence that, regardless of whether one is superior, equal, or inferior to another, social comparison will produce unpleasant feelings, which in turn will cause one to avoid comparison. While not denying that people sometimes seek comparison information, Brickman and Bulman point out substantial costs that may sometimes cancel the rewards of comparison.

In addition to attempts to differentiate general motive states that facilitate or inhibit social comparison, efforts have been made to identify specific situational variables that affect desire for comparison. (In most cases, the resulting comparison behavior is assumed to be motivated by desire for self-evaluation.) These variables include presence versus absence of competition (e.g., Feldman & Ruble, 1977; Mithaug, 1973; Wilson & Benner, 1971); attraction to the comparison other (e.g., Miller, 1977); relevance of comparison information to anticipated action (e.g., Jones & Regan, 1974); degree of uncertainty about one's own ability (e.g., Schwartz & Smith, 1976); and degree of self-focused attention (Pallak, 1978).

Unresolved Issues Regarding Comparison Interest in Classrooms. Although, as the above discussion suggests, determinants of social comparison interest have received a good deal of theoretical and empirical attention, we still have much to learn about comparison interest in classrooms. A major problem is that our knowledge of comparison interest is derived primarily from laboratory experiments. To redress this methodological imbalance and increase the ecological validity of our findings, observational and interview studies of children's comparison interest in school settings must be conducted.

In subsequent work on the determinants of social comparison interest, attention should be given to both developmental and situational factors. Regarding the former, it is interesting that most of the research with children has assumed that social comparison interest is based on desire for accurate self-evaluation. However, as mentioned before, work with adults has suggested that desire for flattering self-evaluation is at least as important. It would seem useful, therefore, to attempt to specify the various motives that facilitate and inhibit social comparison interest in children of different ages.

With regard to situational determinants of comparison interest, classroom variables would seem to warrant investigation. One such variable is the degree to which instruction is individualized. Although it might seem plausible that comparison interest would be lower in individualized than in nonindividualized instructional settings, this may not be true for several reasons. First, because individualized classrooms allow children to move at their own pace and to work at tasks within their level of competence, children's frequency of task completion and concomitant desire for self-evaluation may be relatively high in such classrooms. This in turn may lead to increased comparison interest. Second, because more talking and freedom of movement are allowed in individualized classrooms, children in these settings may be more inclined to compare their

performance with that of their peers. Finally, to the extent that parents can influence the type of classroom in which their children are placed, parents who choose individualized classrooms may be particularly concerned about academic achievement and may communicate this concern to their children. If so, students in these classrooms may be relatively anxious about their performance and therefore eager to evaluate themselves through social comparison.

Another classroom variable that may influence social comparison interest is ability grouping, or tracking. According to Richer (1976), low-ability students only adopt high-ability students as a reference group when the high-ability students are both *visible* (i.e., available for observation) and *meaningful* (i.e., important as a source of comparison or reward). Visibility is assumed to vary positively with the degree of subgroup differentiation and negatively with the size of the total group and the number of subgroups. Meaningfulness is assumed to vary positively with the similarity of subgroups and degree to which rewards are based on subgroup membership. Thus, in Richer's view, comparison between ability groups is not automatic, but rather depends on specific characteristics of the groups involved.

An important aspect of social comparison interest that presumably is influenced by both developmental and situational factors is the dimension on which comparison information is sought. Preschool children, for example, may be more aware of and concerned about physical than intellectual performance (cf. Darley & Goethals, 1980). If so, to the extent that they seek comparison information, they will be more likely to compare themselves on physical than on intellectual dimensions. When children enter school, efforts will be made to teach them to value specific types of intellectual performance. To the extent that these efforts are successful, children will alter the kinds of comparison information that they seek. As children mature, they will come to value new performance dimensions and will strive to obtain comparison information concerning these dimensions. To understand the social comparison process, then, we must understand how dimensions of comparison are selected. Although the above line of reasoning implies that selection of a dimension precedes and causes comparison interest, this relationship might be reversed in some cases. For example, a new child in school who wishes to compare his or her abilities to those of classmates will have to choose performance dimensions that are salient and acceptable to classmates. In addition, it is important to note that valuing a given performance dimension does not necessarily lead one to seek social comparison information regarding it. If an individual believes that comparison information is not relevant to self-evaluation, that no appropriate comparison agents are available, or that embarrassment may result from comparison, he or she probably will not seek comparison even on a valued dimension (cf. Brickman & Bulman, 1977).

Finally, it is interesting to consider cases in which individuals compare relative performances on apparently different dimensions. For example, a child may compare his math grade to a peer's spelling grade, or the win/loss record of his

baseball team to the win/loss record of a peer's football team. At a high school reunion, a lawyer and an artist may assess their relative "success" by comparing how well each has done in his/her respective occupation. This type of social comparison raises a number of interesting questions. For example, does the degree of perceived dissimilarity between performance dimensions influence the "meaningfulness" of the comparison? And are there developmental changes in children's ability to compare on the same versus different dimensions?

Behavior Designed to Obtain Comparison Information (Phase 2)

Once social comparison interest is elicited, the individual emits behavior designed to obtain comparison information (see Figure 2.1). Two major components of this information acquisition behavior can be identified: (a) choice of comparison person(s) and (b) timing and mode of information acquisition.

As will be recalled, Festinger (1954), who viewed accurate self-evaluation as the goal of social comparison, suggested that individuals seek to compare with *similar* others, because these others provide the most accurate and reliable self-evaluative information. Most subsequent investigators have interpreted this similarity hypothesis literally, assuming that an individual who performs at level X on a task seeks to compare with others who also perform at level X. Recently, however, it has been suggested that similarity is sought, not on the specific performance dimension under consideration (e.g., tennis skill), but rather on dimensions related to and presumably predictive of the performance (e.g., age, sex, years of practice) (Goethals & Darley, 1977; Suls, Gaes, & Gastorf, 1979; Suls, Gastorf, & Lawhon, 1978). Thus, this "related attributes" interpretation, although still predicting that individuals desire similar others for comparison, expands the range of dimensions on which similarity is sought.

Festinger's similarity hypothesis has been altered even more radically by the suggestion that under certain circumstances *dissimilar*, rather than similar, others will be preferred for comparison (e.g., Brickman & Bulman, 1977; Mettee & Smith, 1977). Evidence indicates that individuals sometimes do choose dissimilar comparison others and that the relationship between the target's similarity and probability of being chosen for comparison depends on the specific motive underlying the comparison (Fazio, 1979; Goethals & Darley, 1977; Gruder, 1977). Thus, Goethals and Darley suggest that, when an ability is being considered, individuals motivated to obtain accurate self-evaluation will compare with similar others, while those seeking self-enhancement will compare with inferior others and will cognitively distort upward the others' standing on nonability factors presumably related to performance. Other investigators have found that, rather than comparing with similar or inferior others, individuals sometimes compare with superior others (see Feldman & Ruble, 1981; Gruder, 1977; Pepitone, 1980, Chapter 7; Suls & Tesch, 1978). It appears, then, that in order to

predict choice of a comparison other one must know, first, the specific motive underlying social comparison interest and, second, the degree to which comparison with a particular other is likely to satisfy this motive.

A developmental analysis of preferences for similar and dissimilar others recently has been offered by Suls and Mullen (1982), who suggest that preferred targets of social comparison change over the life span. During the earliest phase in which social comparison is sought (middle childhood), children lack the cognitive capacity to distinguish between ability and nonability causes of performance and hence do not appreciate the unique advantages of comparing with similar others. Therefore, children in this phase manifest indiscriminate comparisons with both similar and dissimilar others. During the next phase in which social comparison predominates (late childhood, adolescence, and young adulthood), increased cognitive sophistication, social pressures, and availability of peers cause individuals to prefer similar comparison others. Finally, during the last social comparison phase (middle age), people shift to a preference for mixed (i.e., both similar and dissimilar) comparison others. This relative increase in preference for dissimilar others occurs for two reasons. First, middle-aged people seek comparison with dissimilar others in order to feel unique. Second, dissimilar comparisons are forced on middle-aged people by their social environment (e.g., through competition with younger workers).

In the above discussion it has been implicitly assumed that social comparison is basically an interpersonal phenomenon that takes place at a single point in time and is directed toward assessing a single dimension of ability. It is also possible, of course, for individuals to undertake sequential comparisons and to assess several ability dimensions. Sequential comparisons might involve tracking performance on a single dimension over time or assessing performance on different dimensions at different times. Both types of comparisons could vary in frequency and could involve the same or different comparison others. Such complex forms of comparison may be particularly likely in the classroom, where students perform many times on several ability dimensions (e.g., math, reading, athletics) and have available a range of potential comparison others on each dimension. Like the assumptions that comparison occurs only once and involves only one ability dimension, the assumption that comparison is an exclusively interpersonal phenomenon also may impose unnecessary constraints on our understanding of comparison processes and on our ability to apply this understanding to the classroom. Intrapersonal comparison (i.e., comparison with one's own past performance) no doubt is also important. Although the remaining discussion will focus on interpersonal comparison, it is clear that we must begin to build a comprehensive theoretical framework that integrates intrapersonal and interpersonal comparison. Albert's (1977) temporal comparison theory and Suls and Mullen's (1982) life-span model of self-evaluation provide a beginning for the kind of integration advocated.

Given that a particular other (or group of others) is selected for social comparison, the individual desiring comparison must then decide on the timing and mode of information acquisition. Relatively little attention has been devoted to these important aspects of the social comparison process. In most previous studies, subjects were given a list of potential comparison others differing in performance and were simply asked to select the individuals whose performance they wished to see. In the few studies that have examined active efforts to obtain social comparison information, a relatively small subset of possible comparison behaviors was measured: frequency of glances at another's work (Halisch & Heckhausen, 1977; Pepitone, 1972), frequency of button-pushing that allows visual monitoring of another's performance (Hake, Vukelich, & Kaplan, 1973; Mithaug, 1973; Ruble, Feldman, & Boggiano, 1976; Vukelich & Hake, 1974), and competitive behavior (Conolley, Gerard, & Kline, 1978; Hoffman, Festinger, & Lawrence, 1954; Pepitone, 1972).

Unresolved Issues Regarding Acquisition of Comparison Information in Classrooms. As in the case of the determinants of social comparison interest, we know very little about either choice of comparison persons or timing and mode of information acquisition in classrooms. These aspects of social comparison are likely to be influenced by several factors, including: (a) the motive(s) underlying comparison interest (e.g., desire for self-evaluation, desire for self-enhancement, desire to optimize task effort), (b) the availability of potential comparison persons, (c) one's relationship to potential comparison persons, (d) the dominant task structure of the classroom (cooperative, competitive, individualistic), and (e) one's own and the comparison person's anticipated reaction to the probable outcome of comparison (Pepitone, 1980, Chapter 7). Not only do we lack information concerning how each of these variables independently affects social comparison behavior in classrooms, we have not even begun to assess their interactive effects.

Several interesting questions can be raised regarding the impact of the above variables. At what age do children begin to select comparison persons of different performance levels to satisfy different comparison motives? Under what circumstances are group membership, friendship, and physical proximity as important as (or more important than) performance level in determining comparison choice? How does an individual's familiarity with and past performance on a task influence his or her choice of a comparison person? What preferences do children of different ages have for reciprocal versus nonreciprocal disclosure of performance information (cf. Brickman & Kessler, cited in Brickman & Bulman, 1977)? And, how do people build "deniability" into the comparison process to avoid their own and/or the other person's discomfort following comparison? These represent only a sample of the questions that need to be investigated if we are to understand comparison behavior in classrooms and other natural settings.

Perception of One's Relative Performance (Phase 3)

Behavior designed to obtain social comparison information yields a perception of one's relative performance (see Figure 2.1). This process would appear to be straightforward, producing one of three outcomes: perception that one's performance is superior, equal, or inferior to that of the comparison person(s). However, reflection reveals several complexities. For example, how does an individual integrate conflicting social comparison information (e.g., better performance than Person A and worse performance than Person B) in arriving at a general assessment of his or her relative performance? Is all the conflicting information weighted equally, or is each piece weighted differentially as a function of such factors as source, valence, and time of acquisition (Anderson, 1974)? Moreover, how does the motivation underlying social comparison interest affect information weighting? Finally, how do age-related changes in cognitive processing abilities influence the weighting process (cf. Ruble, in press; Ruble & Boggiano, 1980)?

Even when comparison information is consistent (because there is only one piece of information or because two or more pieces have the same implications for one's performance), the question of how much weight to assign to the information remains. This is because people compare *performances*, but often are really interested in assessing *abilities* (Darley & Goethals, 1980). In order to infer confidently that one's own or another's performance reflects ability, one must rule out other potential determinants of performance (e.g., effort, luck). As Harvey and Smith (1977) suggest, the probability that performance reflects ability is increased when the incentive value of good performance is high and performance is consistent over time. Thus, the weights assigned to one's own and the comparison person's performances depend on knowledge (or assumptions) about the context in which the performances occurred and the history of prior performances. Performance weighting may be further complicated by affective and cognitive consequences of comparison. It seems likely, as Darley and Goethals (1980) suggest, that individuals who are distressed because their performance was lower than that of a comparison person might reduce this distress by attributing their own performance to inhibiting nonability factors (e.g., fatigue) and the other's performance to facilitating nonability factors (e.g., high motivation). In contrast, individuals who are pleased because they outperformed a comparison person might increase this pleasure by attributing *both* their own and the other's performance to ability.

In the above discussion, it has been assumed that individuals are motivated to obtain relative performance information and emit behaviors designed to acquire such information. However, it is important to recognize that relative performance information also can be acquired when an individual is indifferent to such information or even desires to avoid it. Here I am referring to "forced social comparison," that is, comparison information that intrudes upon individuals and compels

them to evaluate their performance even though they are not initially motivated to do so (cf. Allen & Wilder, 1977; Mettee & Smith, 1977). Forced social comparison may be particularly prevalent in classrooms, where peer performance on valued achievement dimensions is highly salient. It might be argued that in many classrooms a conspiracy exists against students who wish to ignore or avoid relative performance information. No matter how hard students try to attend only to their own performance, they are bombarded with information about peers' performances. Thus, to the self-initiated social comparison that occurs in the classroom, we must add the forced social comparison that often characterizes this environment.

Reaction to Perceived Relative Performance (Phase 4)

The final phase of the social comparison process concerns responses that follow acquisition of relative performance information (see Figure 2.1). These responses can be conceptualized along two dimensions: (1) response direction (intrapersonal, interpersonal) and (2) response type (cognitive, affective, behavioral). These two dimensions can be combined to yield a 2 × 3 classification scheme that is useful in organizing past work concerning how people respond to comparison information. It should be noted that much of the research reviewed below was not originally conceptualized in terms of social comparison. Thus, the notion of reaction to comparison information is useful in organizing a rather disparate set of studies.

Intrapersonal Responses

Intrapersonal responses are those responses that have consequences only, or primarily, for oneself. These responses include (a) cognitions about oneself; (b) affect, or feelings, about oneself; and (c) overt behaviors involving task performance and self-reward.

Cognitive Intrapersonal Responses. Several studies have investigated the impact of social comparison information on expectancies for future performance. Early research was conceptualized in terms of level of aspiration (e.g., Anderson & Brandt, 1939; Chapman & Volkman, 1939; Dreyer, 1954). More recent work was stimulated by interest in a variety of topics, including normative-informational influence (Gerard, 1961), cognitive dissonance (Fishbein, Raven, & Hunter, 1963), attributional processes (Fontaine, 1974; Nicholls, 1975), learned helplessness (Brown & Inouye, 1978), and selection of achievement tasks (Trope, 1979; Zuckerman, Brown, Fischler, Fox, Lathin, & Minasian, 1979).

Explicit attention has been given to how social comparison information affects performance expectancies in school settings. For example, after reviewing research on the impact of desegregation, Pettigrew (1967) concluded that "*many*

of the consequences of interracial classrooms for both Negro and white children are a direct function of the opportunities such classrooms provide for cross-racial self-evaluation" (p. 287). Pettigrew argued further that black children's performance expectancies can be affected both positively and negatively by the relatively high peer performance standards that often characterize interracial classrooms. The impact of social comparison information on performance expectancies is also suggested by Rosenbaum's (1980) data on the consequences of high school tracking. Rosenbaum found that (a) students often misperceive what track they are in and (b) students' track perceptions are as good a predictor of their college plans as are actual track placements. Finally, Davis (1966), in a large-scale study entitled "The Campus as a Frog Pond," found that male college graduates' career aspirations were more strongly associated with college grades than with college quality. Davis interpreted his data as suggesting that students evaluate their academic abilities by comparing with peers on their own campus.

In addition to performance expectancies, performance attributions also have received attention from investigators interested in cognitive intrapersonal responses to social comparison information. Attributions refer to explanations of past outcomes, rather than to predictions of future outcomes (expectancies). (According to Weiner, 1979, attributions determine expectancies, but recent evidence obtained by Covington and Omelich, 1979, casts doubt on the strength of this causal relationship.) Although the question of how social comparison information affects self-attributions can be subsumed under the more general question of how consensus information affects attributions, this is typically not done. Thus, in a recent review of consensus information research, Kassin (1979) failed to mention several studies that investigated how social comparison information influences self-attributions of ability. Nonetheless, a number of studies have yielded data indicating that social comparison information is an important determinant of self-attribution (e.g., Ames, 1978; Ames, Ames, & Felker, 1977; Harvey, Cacioppo, & Yasuna, 1977; Levine, Snyder, & Mendez-Caratini, in press; Nicholls, 1975; Sanders, Gastorf, & Mullen, 1979; Stephan, Kennedy, & Aronson, 1977; Wortman, Costanzo, & Witt, 1973).[1]

Affective Intrapersonal Responses. Affective intrapersonal responses to social comparison information involve feelings (e.g., happiness-sadness) that result from perception of one's relative performance. Relevant research indicates that social comparison information is a potent determinant of feelings about oneself (e.g., Ames et al., 1977; Brickman & Bulman, 1977; Drury, 1980; Gastorf & Suls, 1978; Mettee & Smith, 1977; Rogers, Smith, & Coleman, 1978; Smith, 1980; Tesser, 1980). Moreover, as suggested earlier, anticipation of these affec-

[1]Some evidence suggests that social comparison information, in addition to influencing expectancies and attributions, can also affect recall of past performance (e.g., Vreven & Nuttin, 1976).

tive responses to social comparison importantly influences the amount and kind of comparison information sought. It is important to point out that affective intrapersonal responses can be long-lasting (e.g., increased self-esteem) as well as transitory (e.g., momentary happiness) and are complexly related to attributional dimensions, such as causal locus and stability of performance (Covington & Omelich, 1979; Weiner, 1979).

Behavioral Intrapersonal Responses The final category of intrapersonal responses involves overt behavior. Two major subcategories of such behavior have been studied: task performance and self-reward. Regarding the former, evidence indicates that social comparison information affects several dimensions of task performance, including attention to the task (e.g., Santrock & Ross, 1975), monitoring of one's own performance (e.g., Hake, Vukelich, & Kaplan, 1973), time spent on the task (e.g., Nicholls, 1975), task persistence in the face of failure (e.g., Brown & Inouye, 1978), reaction time (e.g., Rijsman, 1974), performance speed (e.g., Halisch & Heckhausen, 1977), and performance quality (e.g., McClintock & Van Avermaet, 1975).[2] Regarding the second subcategory of intrapersonal behavioral responses, several studies have demonstrated that social comparison information affects the degree to which individuals reward themselves following task performance (e.g., Ames, 1978; Ames et al., 1977; Crockenberg, Bryant, & Wilce, 1976; Hook & Cook, 1979; Masters, 1971, 1973). Taken as a whole, then, research on task performance and self-reward indicates that social comparison information has a substantial effect on "nonsocial" behavior.

Interpersonal Responses

Let us turn next to an examination of interpersonal responses to social comparison information. Interpersonal responses are responses that are directed toward or involve other persons. As with intrapersonal responses, interpersonal responses can be placed into three categories: cognitive, affective, and behavioral.

Cognitive Interpersonal Responses. Relevant research has dealt primarily with performance attributions, rather than performance expectancies. Again, as with attributions for one's own performance, the question of how social comparison information affects attributions for others' performance is related to the more general question of how consensus information affects attributions. Although the impact of consensus information on attributions is not fully understood, several experimental studies indicate that, when individuals receive information about their own and another's performance, this comparison information affects at-

[2]Recent research also indicates that social comparison information can influence task preference (Boggiano & Ruble, 1979; Tesser & Campbell, 1980).

tributions about the comparison agent (e.g., Ames, 1978; Ames et al., 1977; Snyder, Stephan, & Rosenfield, 1976; Stephan, Burnam, & Aronson, 1979). In addition to experimental research on performance attributions, several studies conducted in classrooms indicate that students form perceptions of their peers' academic competence (e.g., Fisher, 1978; Rosenholtz & Wilson, 1980; Simpson, 1981; Stipek, 1981). Presumably these perceptions are based at least in part on social comparison information.

Affective Interpersonal Responses. A number of experimental studies have assessed the impact of social comparison information on interpersonal affective responses (i.e., liking). Early work on this topic was reviewed by Lott and Lott (1965), who listed several determinants of attraction that involve explicit or implicit ability comparison. These include (a) sharing success or failure with another person, (b) learning that another person is responsible for one's success or failure, (c) succeeding or failing in the presence of another person, and (d) observing (or learning about) a person who succeeds or fails. More recent experiments dealing with relative performance and liking have been conducted by Harvey and Kelley (1973), Lerner (1965), and Senn (1971). (Also see reviews by Byrne, 1971, and Mettee & Smith, 1977.)

In several experiments, attraction was operationalized as choice of a coworker for a subsequent cooperative, competitive, or individualistic task (e.g., Levine et al., in press; Martens & White, 1975; Miller & Suls, 1977; Swingle, 1969; Wilson & Benner, 1971). Although the implications of such choice have not been investigated in school settings, they may be quite important. For example, it seems likely that the coworker selected for an academic task will substantially affect students' access to information regarding how to complete the task. In addition, such choice will determine the relative performance information that students receive, thereby influencing their feelings about their own performance, their aspirations for future performance, and their task-related behavior. Work choices, when unreciprocated, may cause a student to feel rejected and socially isolated. When such choices are reciprocated consistently, the student may be seen by others as part of a clique, which in turn may reduce his or her opportunities for wider social comparison.

In addition to the experimental studies mentioned above, numerous attempts have been made to assess the relationship between relative performance and popularity in classrooms. Early work on this topic was reviewed by Hartup (1970), and more recent studies have been conducted by Carter, DeTine, Spero, and Benson (1975), Gottlieb, Semmel, and Veldman (1978), MacMillan and Morrison (1980), and McMichael (1980). It has been suggested that the relationship between academic performance and popularity may be influenced by the task structure of the classroom (Hallinan, 1981). Consistent with this hypothesis, Bossert (1979) recently found that performance is a stronger determinant of friendship choice in "recitation" classrooms (where all students work on the

same task and their performance is public and comparable) than in "multitask" classrooms (where students work on different tasks and their performance is nonpublic and noncomparable).

Behavioral Interpersonal Responses. The last category of reaction to social comparison information involves interpersonal behavior. It has been found, for example, that comparison information affects the magnitude of reward given to the comparison agent (e.g., Ames, 1978; Crockenberg et al., 1976; Hook & Cook, 1979; Kennedy & Stephan, 1977; Masters, 1971). In addition, research indicates that social comparison can produce a number of other interpersonal behaviors. These include increased competitiveness in a game situation (e.g., Toda, Shinotsuka, McClintock, & Stech, 1978), aggression toward the comparison agent (e.g., Santrock, Smith, & Bourbeau, 1976), efforts to disrupt the agent's performance (e.g., Pepitone, 1972), and forcible acquisition of the agent's rewards (Santrock, Readdick, & Pollard, 1980).

Reaction to Comparison Information in the Classroom

As the foregoing discussion suggests, social comparison can have a number of intrapersonal and interpersonal consequences. On a priori grounds, it seems likely that some of these consequences might be beneficial to children in classroom settings, whereas others might be detrimental. It is interesting, therefore, that discussions of social comparison have tended to dwell on its hazards. It has generally been assumed that social comparison is more bad than good and that its harmful effects are particularly obvious for children whose performance is lower than that of their peers. Among the alleged negative consequences of comparison are feelings of intellectual inferiority, low aspiration level, lack of task motivation, interpersonal hostility, and competitiveness.

In an effort to avoid these undesirable outcomes, educational environments that reduce the potential for "maladaptive" social comparison have been created. For example, educators have attempted to build individualized learning environments in which the salience of peers' performance is so low that children must evaluate themselves solely in terms of their own past performance. As mentioned earlier, there is reason to question the effectiveness of such environments in eliminating social comparison interest. In addition, cooperative learning techniques have been devised, in which children of all ability levels receive relative performance information that allows them to feel academically competent (Aronson & Osherow, 1980; Johnson & Johnson, 1978; Slavin, 1980, this volume).

It still seems reasonable, however, to ask, "Is social comparison generally detrimental in classroom settings?" In attempting to answer this question, one must consider the validity of the assumption that comparison is particularly detrimental to low-performing children. Of the several negative consequences of comparison mentioned earlier, the first two (i.e., feelings of intellectual in-

feriority and low aspiration level) presumably occur only when one's performance is lower than that of others. In contrast, the last three consequences (i.e., lack of task motivation, interpersonal hostility, and competitiveness) may be related to relative performance in a more complex fashion. For example, it seems possible that a child who feels superior to his or her classmates may have as little motivation to work hard as a child who feels inferior. In addition, perceived superiority may produce as much hostility to classmates as perceived inferiority. Finally, competitiveness may be most probable, not when a child performs markedly better or worse than peers, but rather when he or she performs at approximately the same level. Thus, it is difficult to argue on a priori grounds that one particular type of relative performance information (superiority, equality, inferiority) is inherently better or worse than another (cf. Brickman & Bulman, 1977). Moreover, in the case of superiority and inferiority, it seems likely that the size, as well as the direction, of the performance difference will mediate the beneficial/harmful consequences of social comparison.

Even when we consider inferiority feelings produced by negative comparison information, the issue is more complex than it may seem at first glance. It is a cultural truism that low self-esteem, or negative self-concept, is detrimental to academic achievement. If this is true, and if social comparison produces low self-esteem in low-performing children, then it follows that social comparison is harmful. However, are we really sure that self-esteem is an important determinant of academic achievement? The somewhat surprising answer is "no." As Scheirer and Kraut (1979) conclude in their recent review of educational intervention programs designed to alter self-concept, "the overwhelmingly negative evidence reviewed here for a causal connection between self concept and academic achievement should create caution among both educators and theorists who have heretofore assumed that enhancing a person's feelings about himself would lead to academic achievement" (p. 145). Recent research by Maruyama, Rubin, and Kingsbury (1981) points to the same conclusion.

It would seem that a more sophisticated conceptualization of the relationship between self-esteem and academic performance is needed. First, it must be recognized that the causal arrow between self-esteem and performance might run in both directions (cf. Bachman & O'Malley, 1977; Scheirer & Kraut, 1979). In the case in which performance causes self-esteem, a linear relationship between these variables is plausible (i.e., increased performance produces increased self-esteem). However, in the case in which self-esteem causes performance, a curvilinear relationship may exist. That is, both very low and very high self-esteem may inhibit performance. People with low self-esteem may avoid challenging tasks because they expect to fail, whereas people with high self-esteem may avoid the same tasks because they expect to succeed and do not feel the need to "prove" their competence. This line of reasoning suggests that the need to convince oneself and others of one's competence may be a major determinant of effortful striving in school and work settings. If so, it would be interesting to

investigate the amount of self-esteem that produces optimal effort in different academic domains and in children of different ages. Perhaps more self-esteem is needed to produce a unit of effort in young children than in older children and adults. If so, educators might seek to design learning environments in which evaluative feedback is calibrated to the developmental level of the student, so that "optimal" self-esteem is produced in children of all ages. Finally, as Bachman and O'Malley (1977) suggest, a correlation between self-esteem and performance might be attributable to a third factor (e.g., SES, academic ability) that influences both variables. If this is the case, efforts to alter self-esteem are likely to have little effect on academic achievement. (See Shavelson & Stuart, 1981, for a discussion of how causal modeling techniques can be used to clarify the relationship between self-concept and achievement.)

A major source of difficulty in assessing the relationship between self-esteem and academic performance is confusion regarding the conceptual and operational definition of self-esteem (see Gergen, 1971; Scheirer & Kraut, 1979; Wells & Marwell, 1976; Wylie, 1974, 1979). One important definitional issue involves the centrality, or salience, of various performance dimensions to a person's self-esteem. This issue is addressed by Tesser (1980; Tesser & Campbell, 1980) in a recent model of self-esteem maintenance. Tesser argues that the impact of social comparison information on a person's self-esteem is mediated by the "relevance" of the underlying performance dimension to the person's self-definition. Thus, performing better or worse than another on a high-relevance dimension has greater impact on self-esteem than the same performance on a low-relevance dimension. Although not dealing explicitly with social comparison, Darley and Goethals (1980) also stress the need to clarify the dimensions underlying self-esteem. They assert that most people typically have high self-esteem, but differ in regard to the specific abilities or characteristics they feel they possess. This variability in "claimed abilities" means that persons who believe they have the specific abilities assessed by standard self-esteem scales receive high self-esteem scores, whereas others whose self-perceived abilities are not measured by the scales receive low scores. From these assumptions, Darley and Goethals conclude that "it would be more important to map the scope of a person's ability claims rather than to measure some generalized notion of self-esteem" (p. 34). Such a strategy would seem useful in investigating the potentially complex relationships between self-esteem and achievement in school settings.

Another question related to the issue of how comparison information influences achievement striving concerns the circumstances under which low-performing students (a) become discouraged about their ability and "give up" or (b) seek to emulate their higher-performing peers and learn from them. This question underlies much of the controversy regarding the advantages and disadvantages of desegregation and ability grouping for black and low-ability students, respectively. According to Richer (1976), giving up occurs when higher

performing peers are taken as a "comparative" reference group, whereas emulation occurs when these peers are taken as a "normative" reference group. Richer goes on to argue that, when higher performing peers are visible and meaningful, "the greater the perceived possibility of upward mobility, the more likely positive normative reference-group behavior, and the less likely comparative selection resulting in relative deprivation" (p. 69). Thus, Richer suggests that students' perceived inferiority can have either positive or negative consequences for their achievement striving, depending on the degree to which students perceive that status mobility (presumably mediated by academic achievement) is possible (cf. Tajfel, 1979).

Finally, the relationship between relative performance and aspiration level might be mentioned. Although negative performance information may sometimes reduce aspiration to such a low level that challenging tasks are avoided and learning is retarded, it is not clear that a relatively low aspiration level is always harmful. For example, do we really want all children, regardless of ability, to have a high aspiration level for academic performance? How long will low-ability children be able to sustain these aspirations, and how will they react when performance and aspiration diverge? Is the increased effort really worth the dashed hopes? If we decide that low aspiration is only *sometimes* detrimental, a good deal of thought must be given to defining "appropriate" aspiration levels for children of varying ages and abilities. (See Janoff-Bulman and Brickman, 1982, for a thoughtful discussion of the costs of task persistence when performance expectations are unrealistically high.)

On the positive side, social comparison would seem to have two major potential benefits. First, to the extent that self-evaluation is desired, comparison can provide information that is not obtainable in any other manner. This information may be valuable, not only for assessing current performance, but perhaps even more importantly for allowing selection of future tasks that are within one's level of competence. Thus, obtaining self-evaluation of an ability that is known to be predictive of success in a particular domain can be helpful in deciding whether to invest time and effort in that domain. In addition, observing the performance of a similar peer on a novel task can provide information regarding whether one should attempt the task. Second, comparison information may be useful in sustaining motivation. No matter what one's level of performance, higher-performing comparison agents can usually be identified and, through explicit or implicit competition, can increase one's effort (Suls & Sanders, 1979). (It should be noted that Festinger, 1954, viewed competition as an outgrowth of self-evaluation motivation, based on the interaction of desire for a similar comparison agent and desire for continually increasing performance.)

In summary, it would seem that social comparison can be both beneficial and detrimental in school settings. As with many other social behaviors (e.g., conformity, aggression, competition), commentators often forget the adaptive significance of the behavior and decry it as evil because one or more of its manifes-

tations is offensive. Clearly, value judgments cannot be avoided when one is making prescriptive statements about how schools should be organized and the kinds of intellectual and social behaviors that schools should encourage. Because of the potentially important consequences of such prescriptive statements, educators must examine carefully their ultimate educational goals and the risks as well as benefits of various means to achieve these goals. If this is done in an open-minded fashion, it seems likely that social comparison will emerge as a useful means for promoting certain educational goals.

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